

(19) World Intellectual Property
Organization
International Bureau



10/518875



(43) International Publication Date
15 January 2004 (15.01.2004)

PCT

(10) International Publication Number
WO 2004/005419 A1

(51) International Patent Classification⁷: C09J 161/06,
161/24, 161/28

(74) Agents: LAFERTY, Samuel, B. et al.; The Lubrizol Corporation, Patent Dept.-Mail Drop 022B, 29400 Lakeland Blvd., Wickliffe, OH 44092-2298 (US).

(21) International Application Number:
PCT/US2003/020755

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date: 2 July 2003 (02.07.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/394,051 3 July 2002 (03.07.2002) US

(84) Designated States (*regional*): European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR).

(71) Applicant (*for all designated States except US*): THE LUBRIZOL CORPORATION [US/US]; 29400 Lakeland Blvd., Wickliffe, OH 44092-2298 (US).

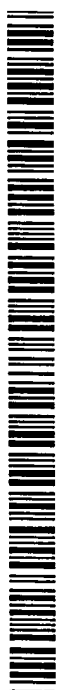
Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): MANKA, John, S. [US/US]; 10440 Penniman Drive, Chardon, OH 44024 (US). YONKER, Todd, K. [US/US]; 102 Waverly Lane, Chagrin Falls, OH 44022 (US). PERZ, John, S. [US/US]; 5432 Wixford Lane, Mentor, OH 44060 (US).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.



WO 2004/005419 A1

(54) Title: RHEOLOGY CONTROL FOR ADHESIVES BASED ON FORMALDEHYDE RESINS

(57) Abstract: Water soluble polymers are incorporated into cellulose adhesives comprising phenol formaldehyde and related formaldehyde resins to impart more resistance to sagging and to increase the open time of the adhesive. A preferred use of the modified adhesive is as an adhesive for assembling engineered wood products such as strand board, particle board, medium density fiberboard, plywood and engineered products such as I-beams. The water soluble polymers achieve the objectives of increased sag resistance and more open time by increasing the viscosity of the adhesive and slowing the loss of water to the cellulose products and the air during use of the adhesive.